

Figure 21. Number of mature females, pre-recruits and commercial-sized adult males in northeastern Nova Scotia.

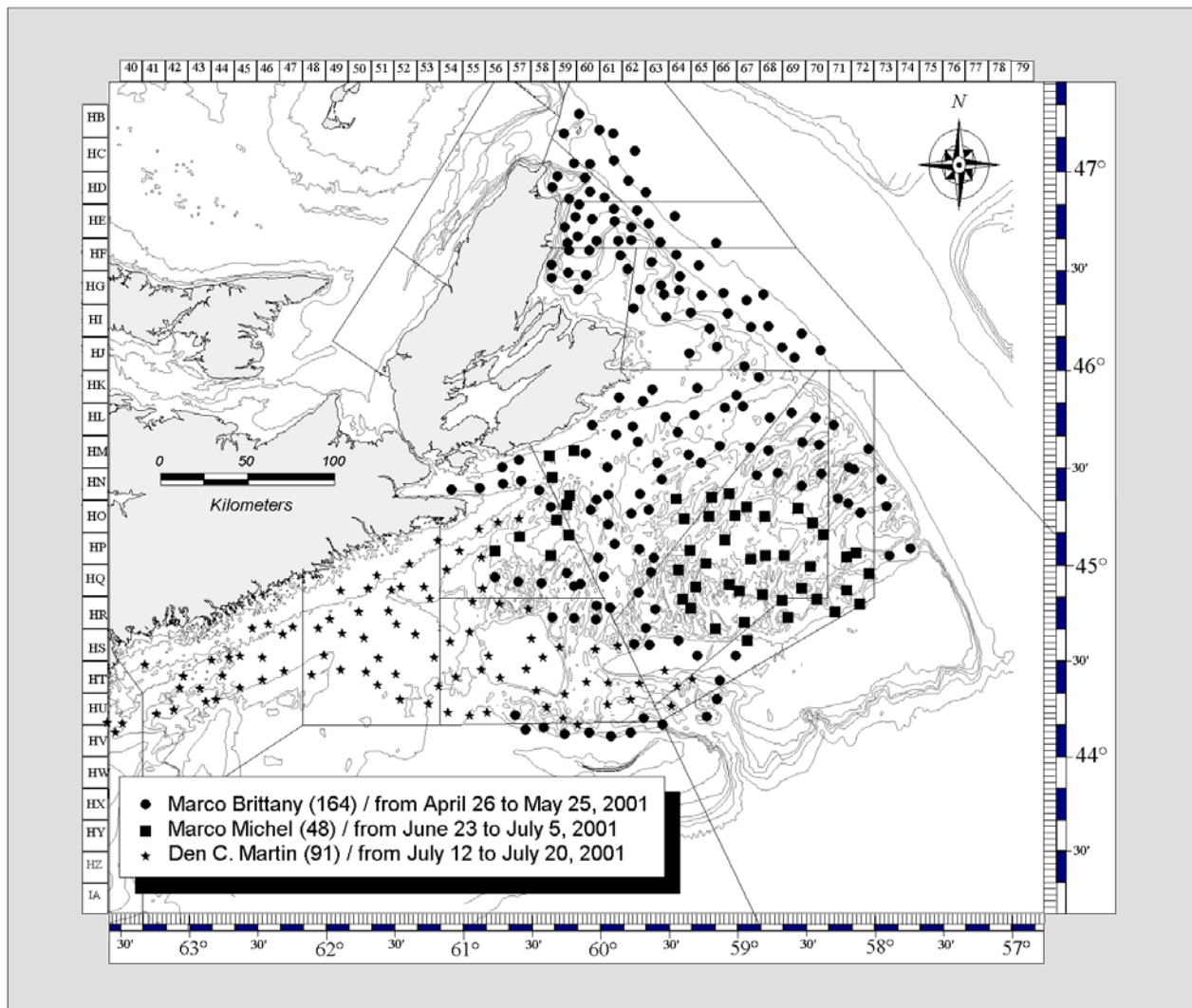


Figure 22. Location of Snow Crab trawl survey stations (N=303) with the different vessels, in 2001.

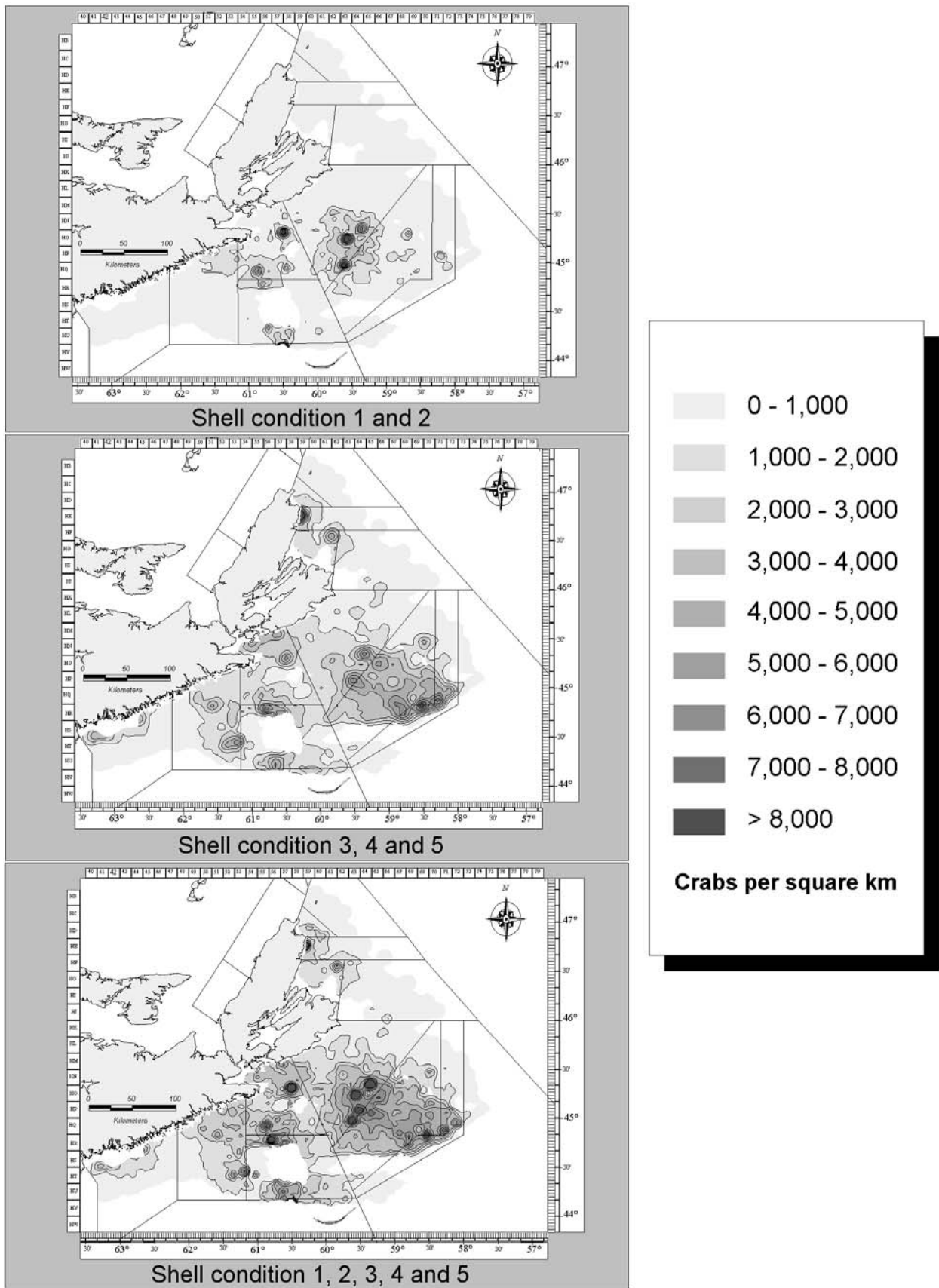


Figure 23. Snow Crab density distribution of adult males (≥ 95 mm carapace width) for different shell conditions, in 2001.

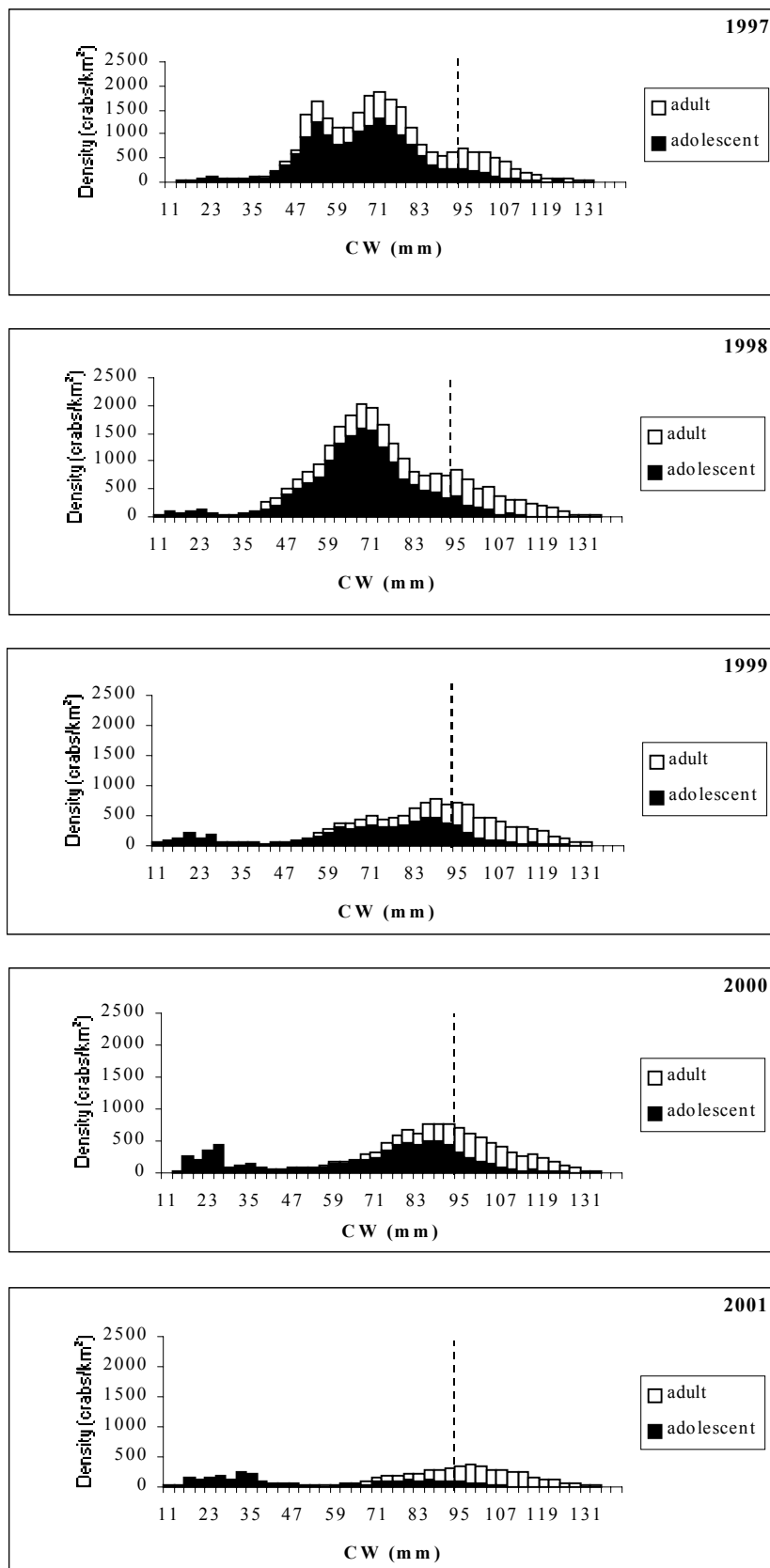


Figure 24. Survey size frequency of male Snow Crab in southeastern Nova Scotia from 1997 to 2001.

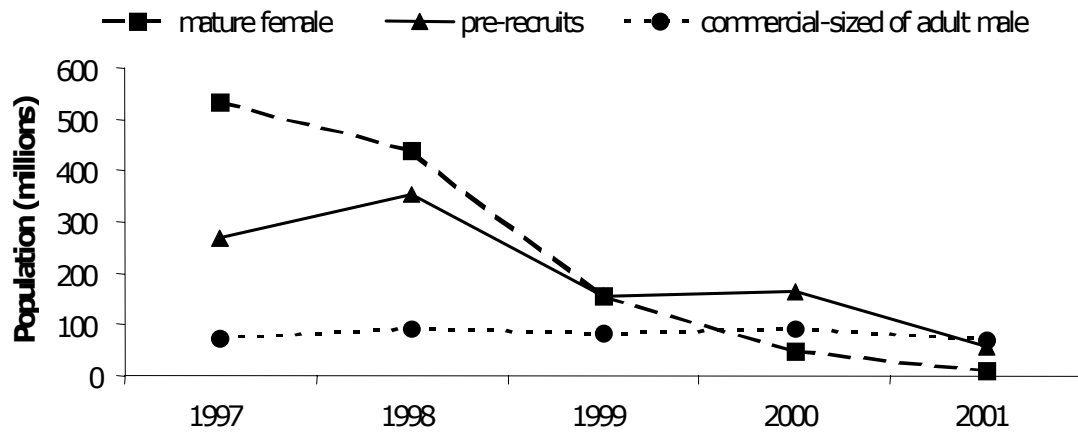


Figure 25. Number of mature females, pre-recruits and commercial-sized adult males in southeastern Nova Scotia.

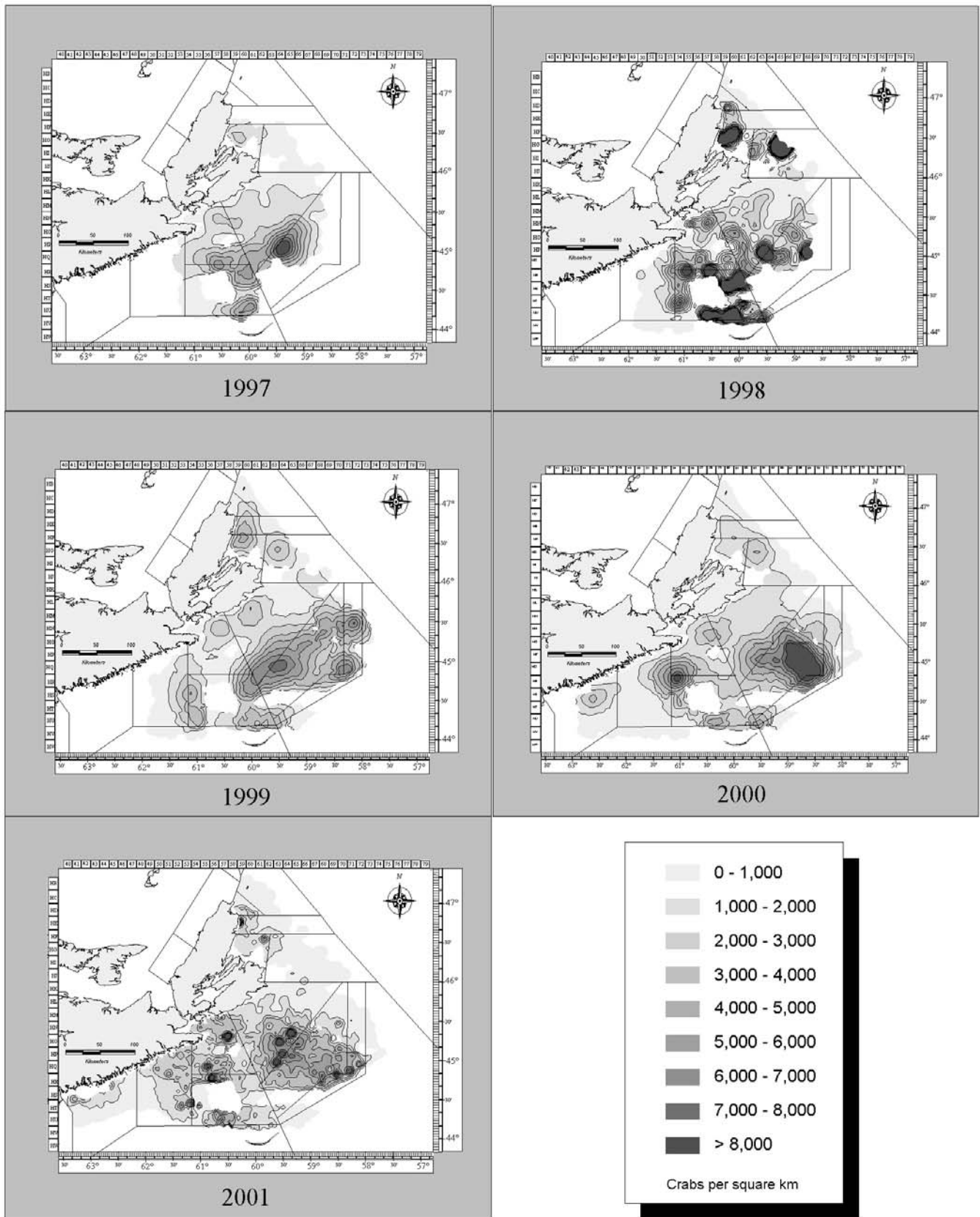


Figure 26. Snow Crab density distribution of adult males (≥ 95 mm carapace width) since 1997.

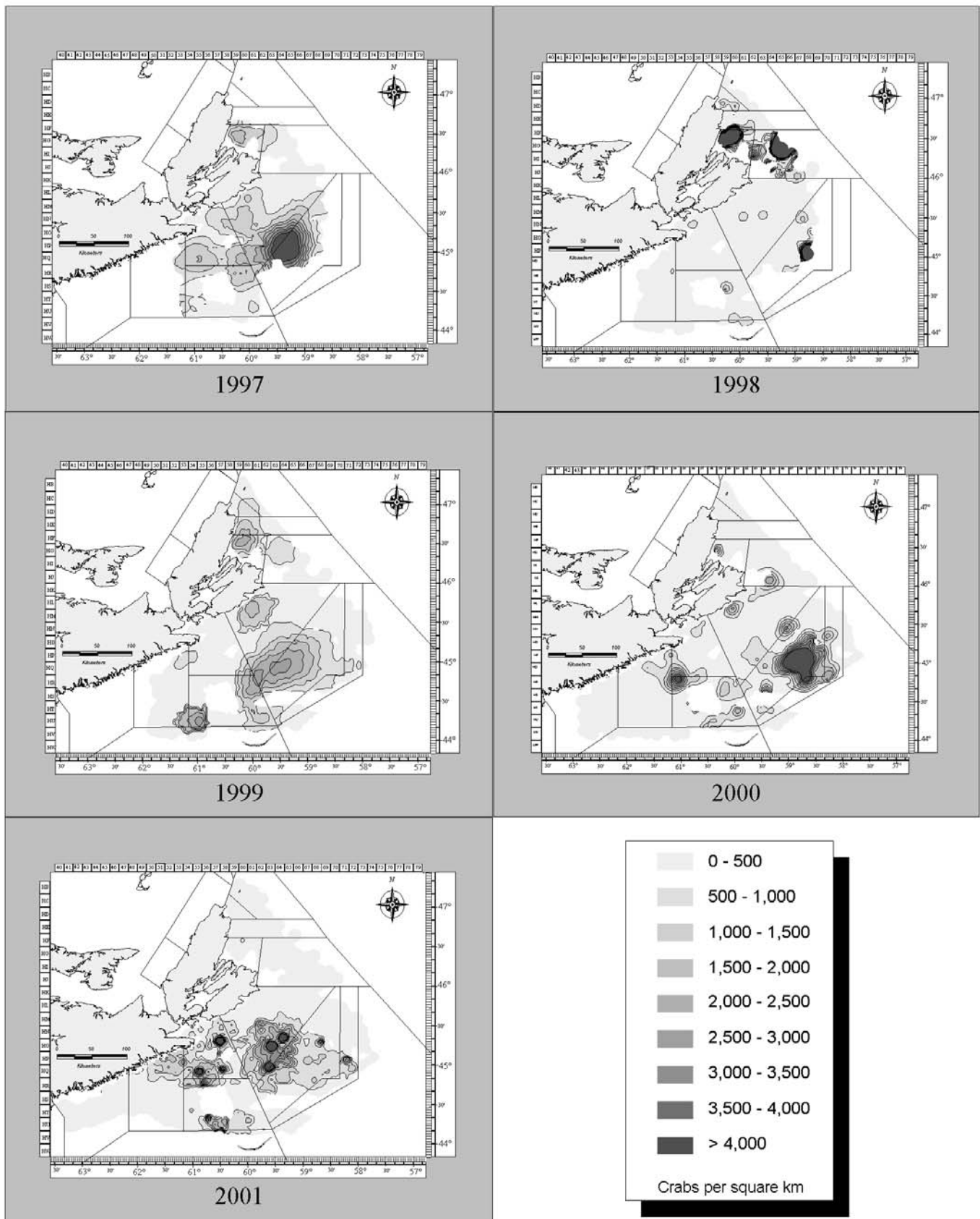


Figure 27. Snow Crab density distribution of adult male (≥ 95 mm carapace width) soft-shell crab since 1997.

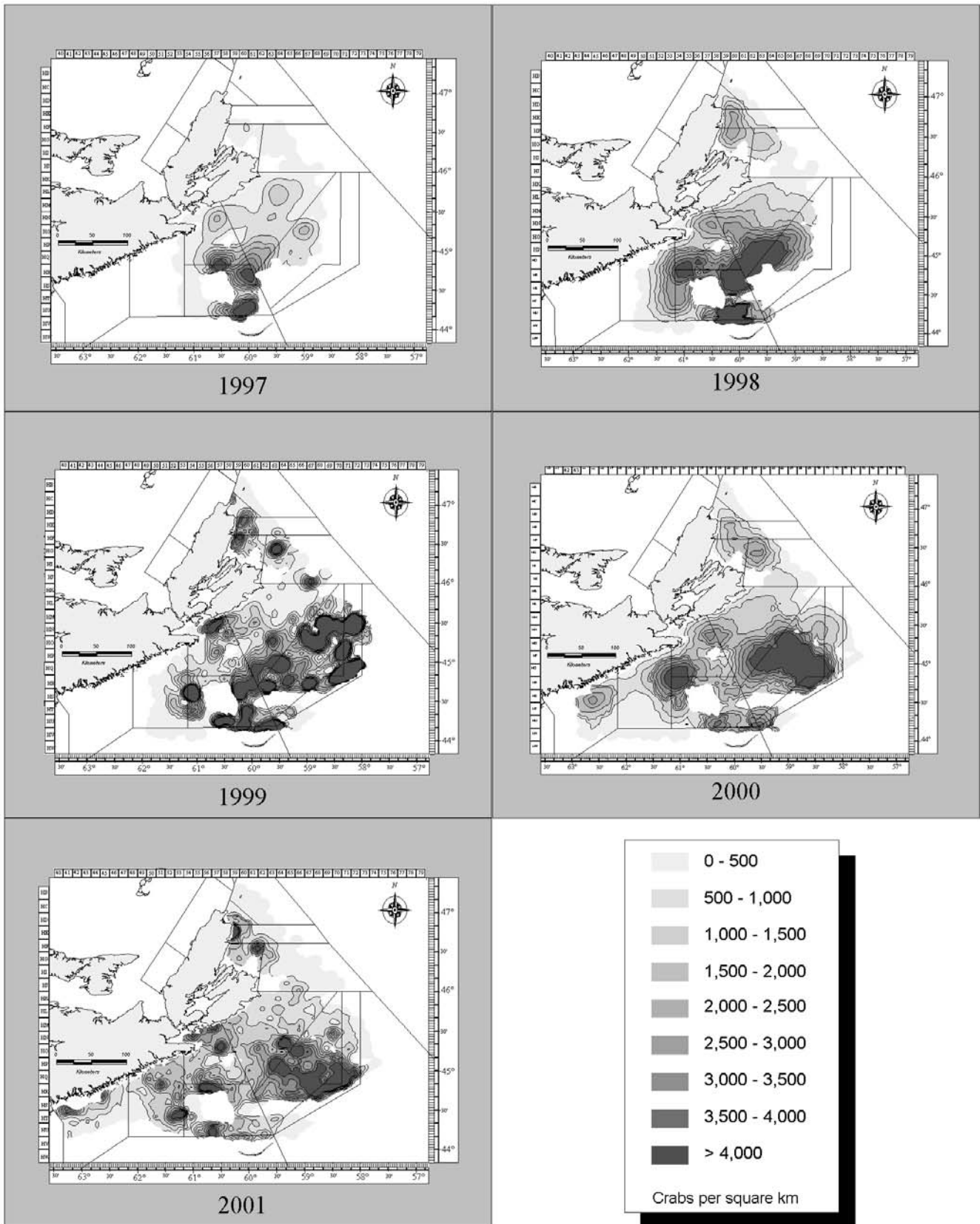


Figure 28. Snow Crab density distribution of adult male (≥ 95 mm carapace width) hard-shell crab since 1997.

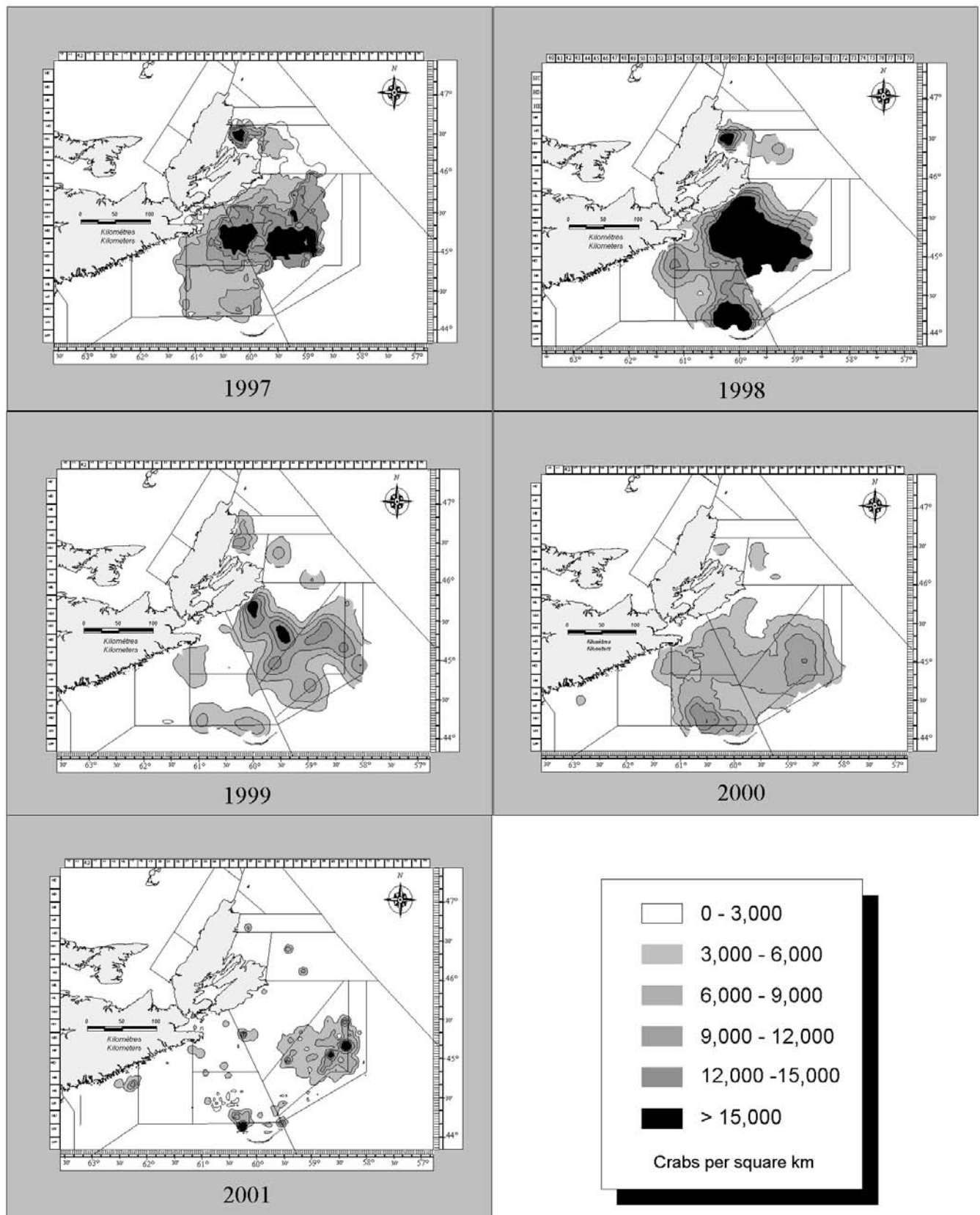


Figure 29. Snow Crab density distribution of adolescent male (≥ 56 mm carapace width) since 1997.

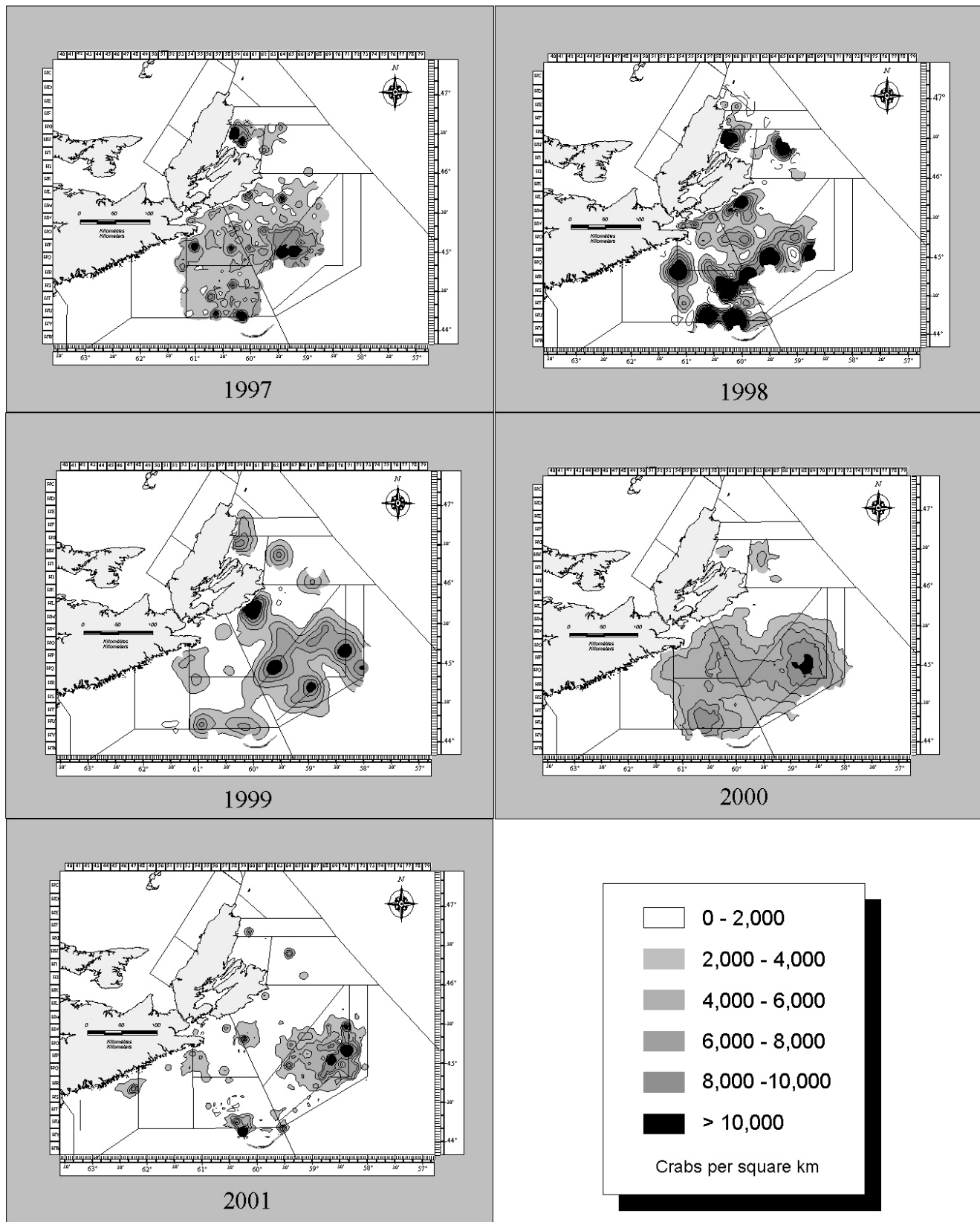


Figure 30. Snow Crab density distribution of adolescent male (≥ 76 mm carapace width) since 1997.

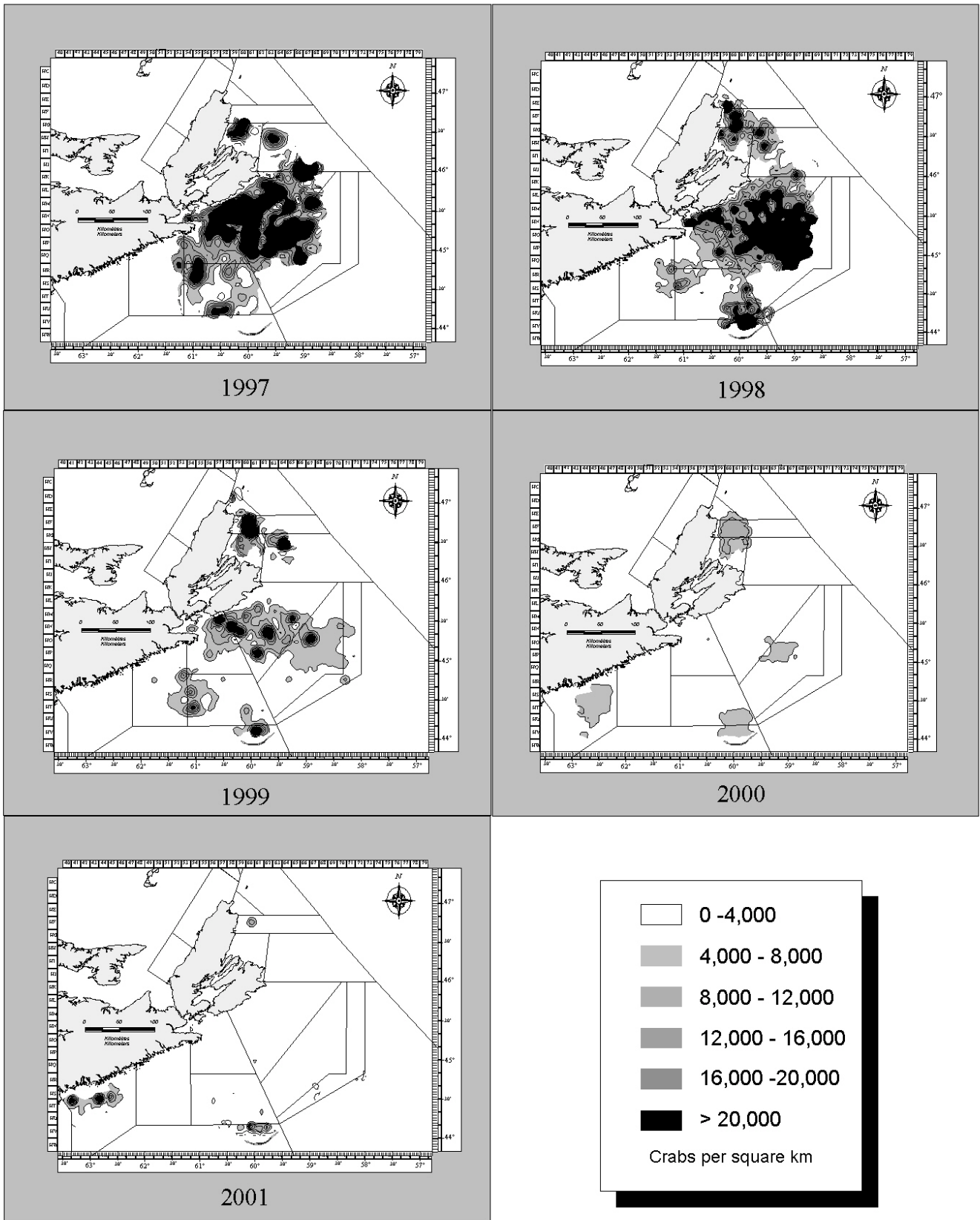


Figure 31. Snow Crab density distribution of mature female since 1997.

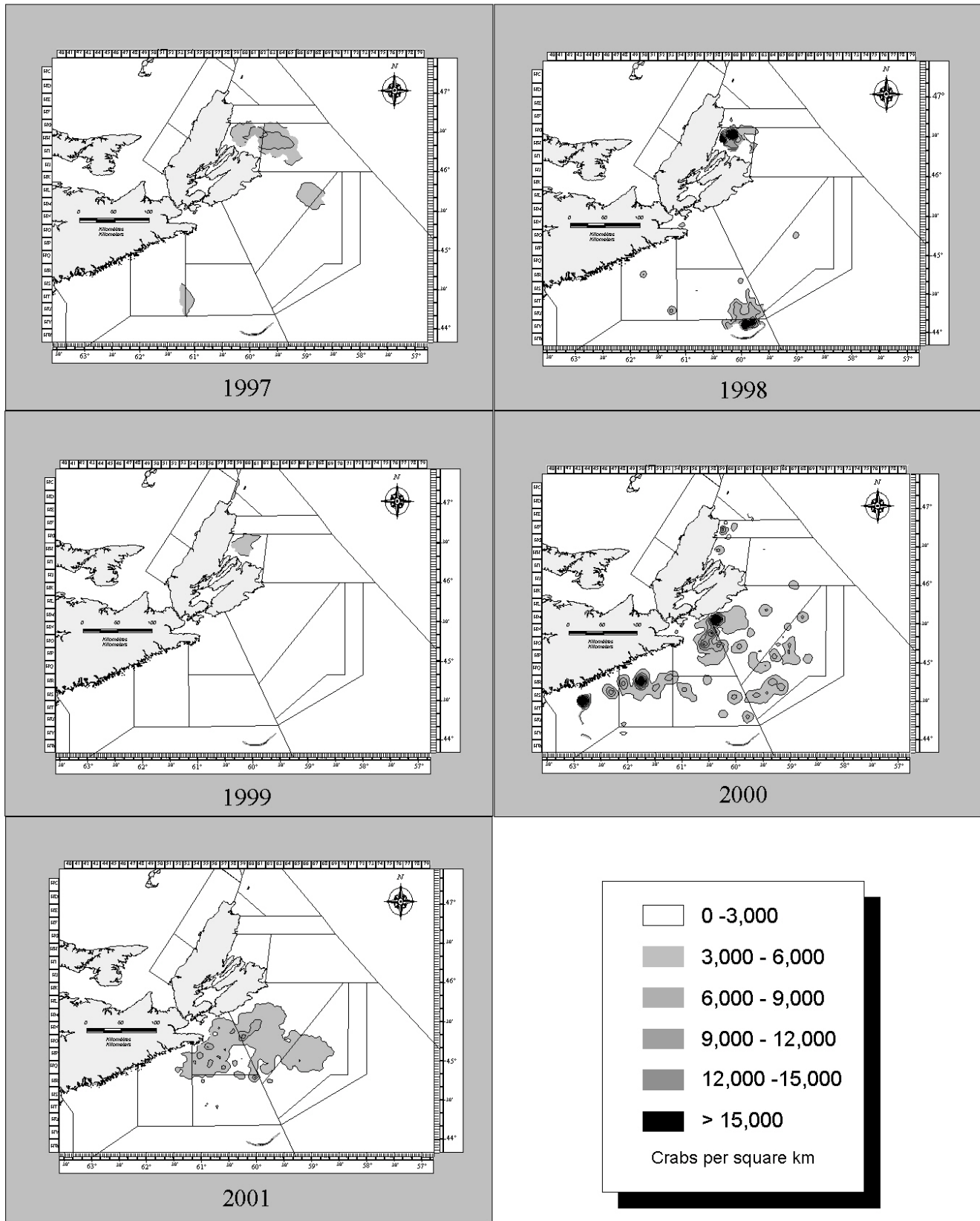


Figure 32. Snow Crab density distribution of immature female since 1997.

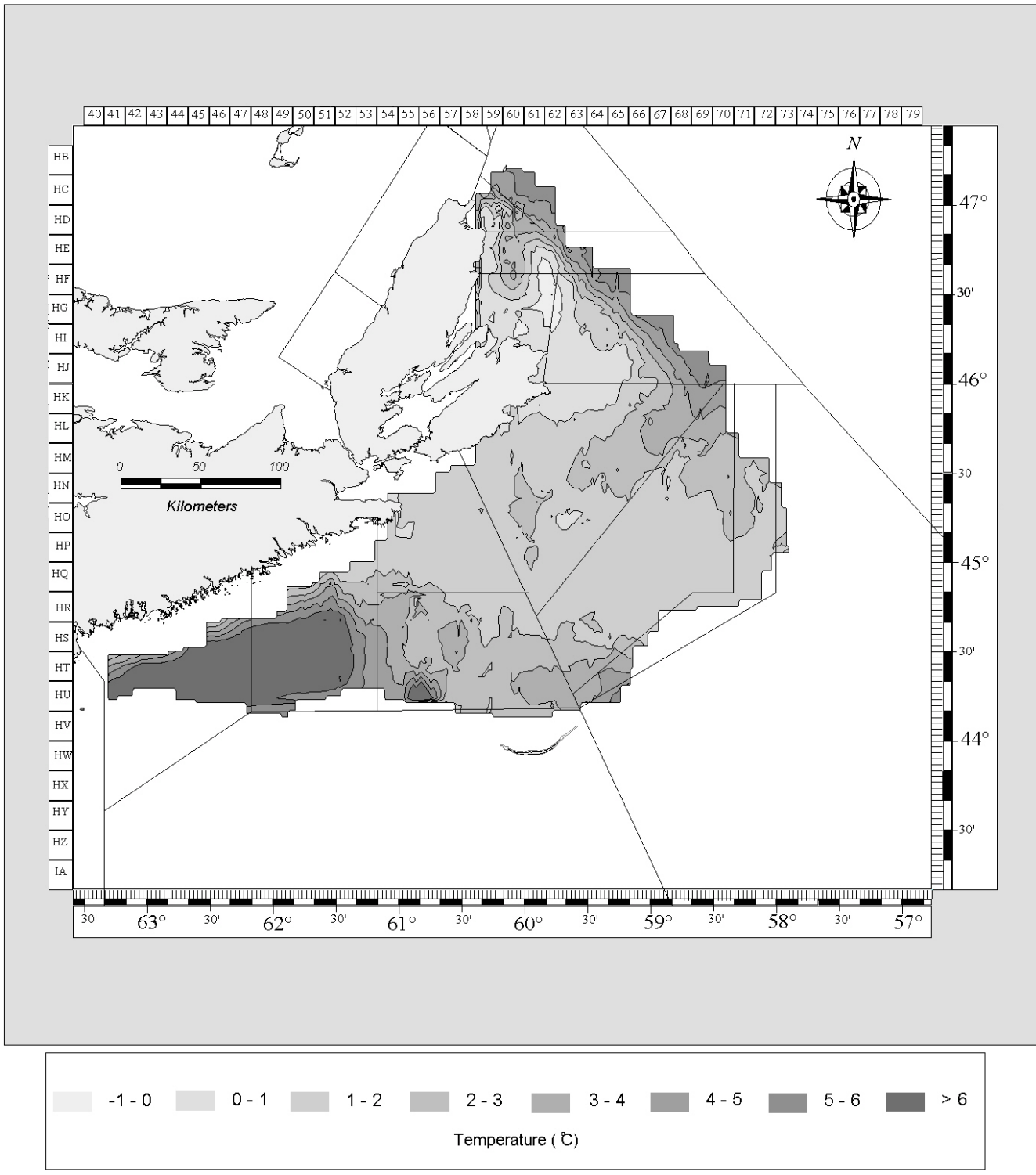


Figure 33. Temperature data from the Snow Crab trawl survey in 2001.

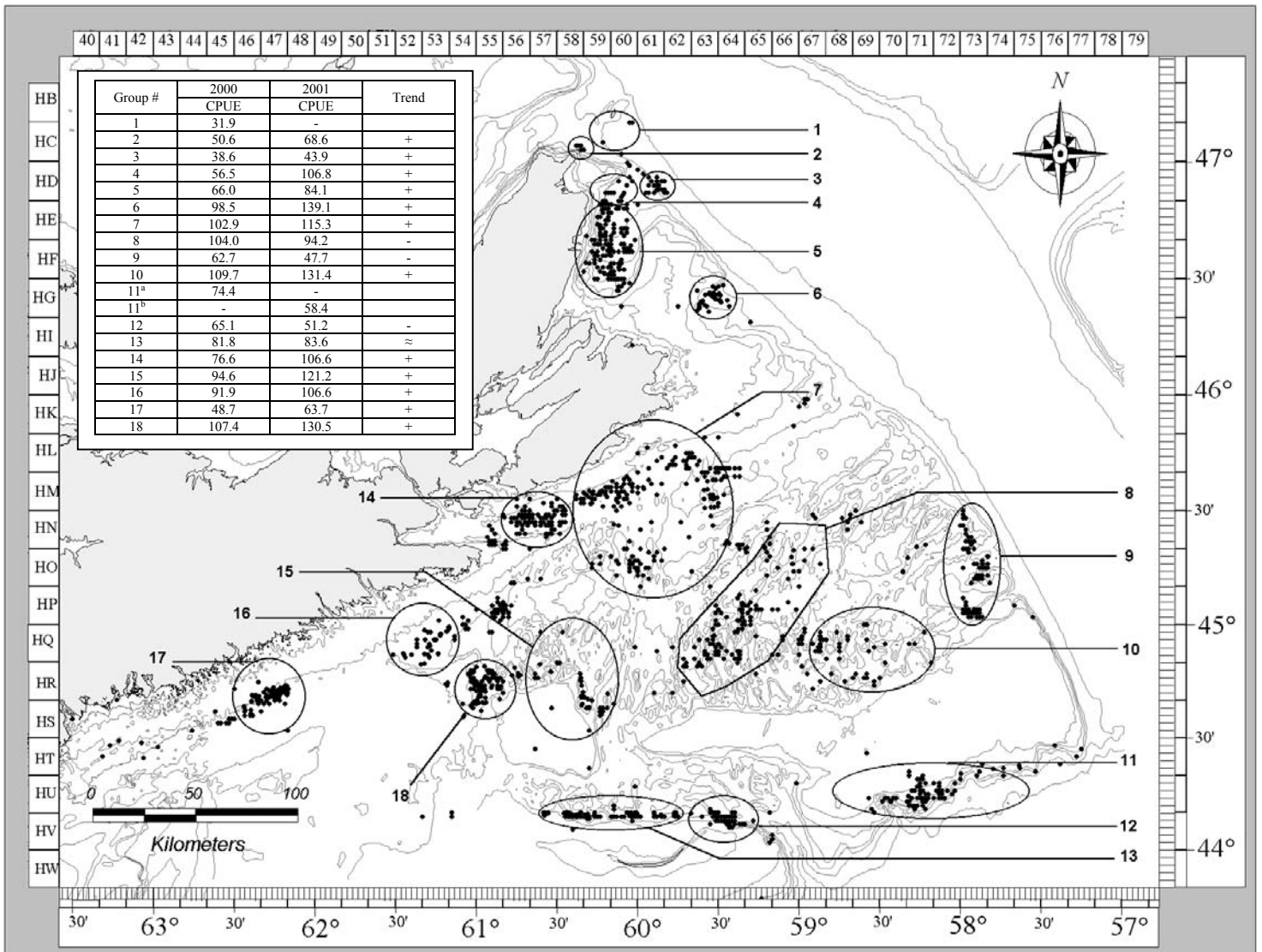


Figure 34. Catch per unit effort for different groups without taking into consideration the areas.

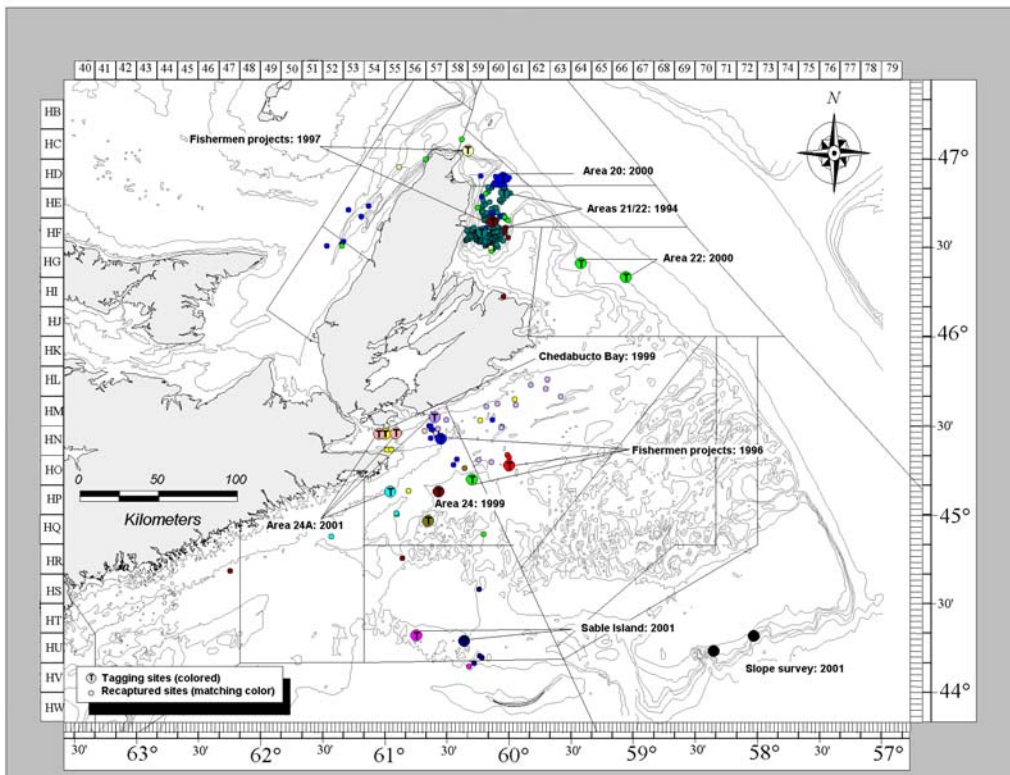


Figure 35. Tagging and recapture sites for eastern Nova Scotia (areas 20 to 24).

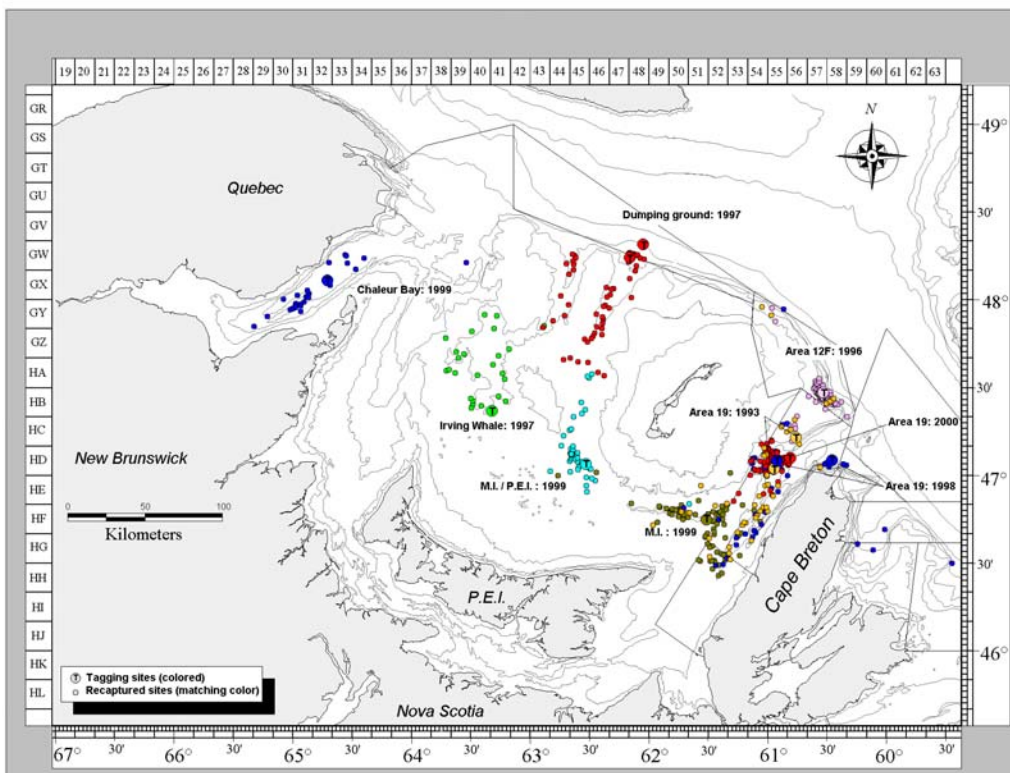


Figure 36. Tagging and recapture sites for the southern Gulf of St-Lawrence (Areas 12, 18, 19 and Area E and F).

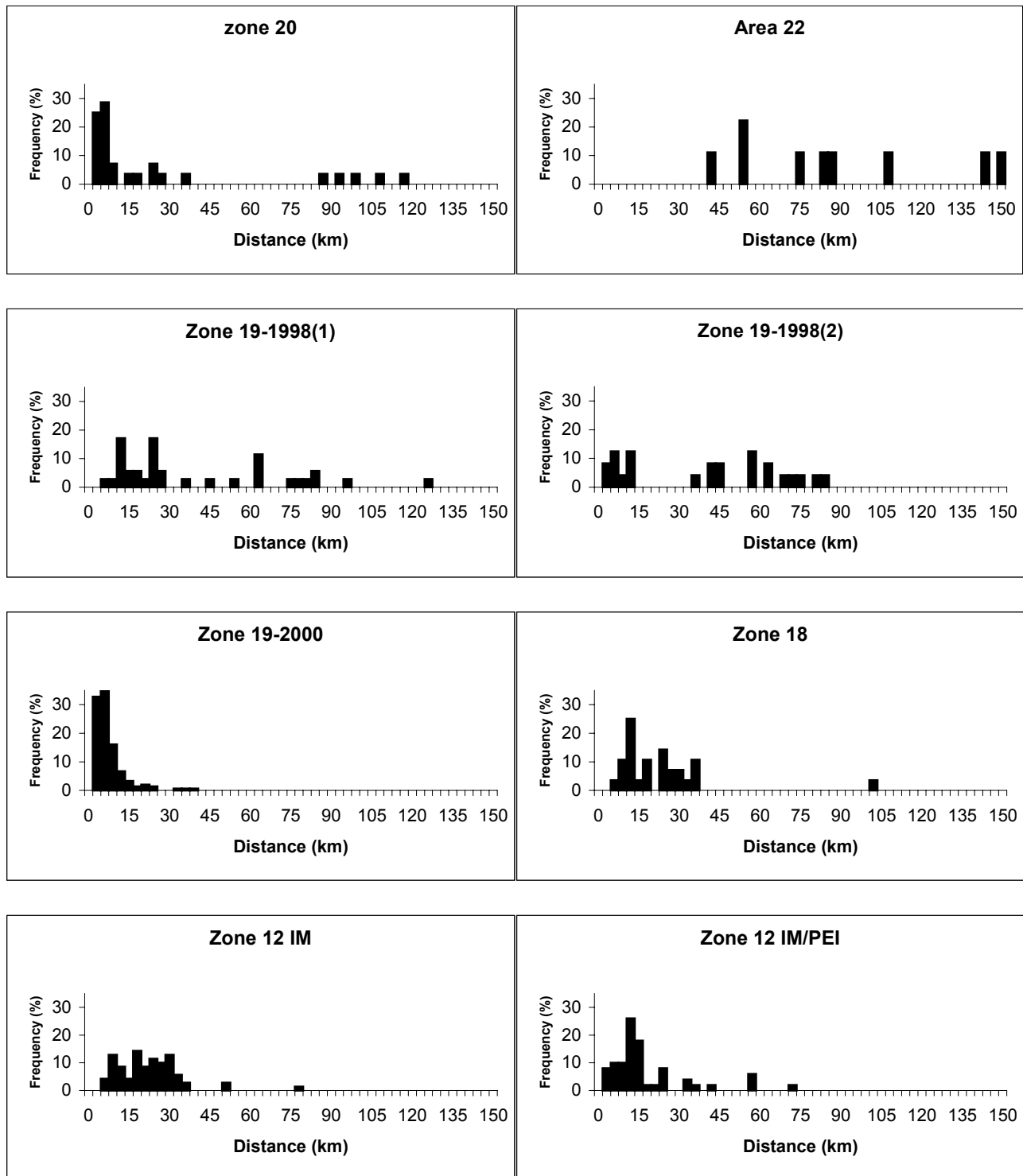


Figure 37. Frequency (%) of recaptured crab versus distance travelled compared to other tagging sites.

Appendix 1

Classification of carapace stages developed for the SGSL stock based on carapace condition, durometer reading and corresponding approximate age after terminal molt (modified from CAFSAC 1991; Anonymous 1994).

Category	Stage	Durometer reading	Carapace condition	Approximate age after terminal molt
New soft	I	< 68	brightly colored, iridescent, soft, no epibionts, chelae easily bent.	0-5 months
Clean	II	variable	brightly colored, some iridescence, may have epibionts, chelae not easily bent	5 months- 1 year
Inter-mediate	III	> 68	dull brown dorsally and yellow-brown ventrally, no iridescence, shell abrasion evident, epibionts.	8 months -3 years
Old	IV	> 68	carapace very dirty but hard, decay may be present at leg joints, epibionts removable at processing plant.	2 - 5 years
Very old	V	variable	carapace very dirty and may be soft (durometer reading < 68), progression of decay may be evident, epibionts not removable at processing plant.	4-6 years

Appendix 2

Classification of health categories used during the soft and white crab mortality experiment, and based on the vitality and appearance of the snow crab.

Category	Health condition	Characteristics
A1	Alive; excellent	When holding carapace, legs are horizontal and straight to the crab; actively moving .
A2	Alive; good	When holding carapace, legs are horizontal and straight to the crab; reduced or no movement .
A3	Alive, fair	When holding carapace, legs are slightly hanging (<45° angle to the crab); mandibles are moving ; abdomen returns tight to the body once pulled.
B	Weak	When holding carapace, legs are hanging (>45° angle to the crab); mandibles are <u>not</u> moving (except if pulled); abdomen <u>does not</u> return tight to the body once pulled.
C	Dead	No movement, even after stimulation

Appendix 3

Table 1. Seasonal catch composition, in number, from at-sea samples for eastern Nova Scotia (Areas 20 – 24) in 2001.

a) Catch composition in Area 20 (in number).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
4	16	< 95 mm	7	62	1	0	8	62	70
		> 95 mm	10	324	2	2	12	326	338
		total	17	386	3	2	20	388	408

b) Catch composition in Area 21 (in number).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
7	13	< 95 mm	69	21	9	0	78	21	99
		> 95 mm	213	164	32	11	245	175	420
		total	282	185	41	11	323	196	519

c) Catch composition in Area 22 (in number).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
8	40	< 95 mm	11	303	1	3	12	306	318
		> 95 mm	26	1,100	10	75	36	1,175	1,211
		total	37	1,403	11	78	48	1,481	1,529

Appendix 3

Table 2. Seasonal catch composition, in number, from at-sea samples for Crab Fishing Area 23 in 2001.

a) Catch composition in CFA 23, all sub-areas (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
78	638	< 95 mm	552	2,037	105	63	657	2,100	2,757
		> 95 mm	2,708	17,341	562	1,763	3,270	19,104	22,374
		total	3,260	19,378	667	1,826	3,927	21,204	25,131

b) Catch composition in CFA 23, sub-area A (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
27	167	< 95 mm	221	814	29	19	250	833	1,083
		> 95 mm	543	4,530	144	581	687	5,111	5,798
		total	764	5,344	173	600	937	5,944	6,881

c) Catch composition in CFA 23, sub-area B (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
22	147	< 95 mm	188	454	33	17	221	471	692
		> 95 mm	684	3,915	160	731	844	4,646	5,490
		total	872	4,369	193	748	1,065	5,117	6,182

d) Catch composition in CFA 23, sub-area C (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
2	16	< 95 mm	10	101	3	0	13	101	114
		> 95 mm	20	472	7	4	27	476	503
		total	30	573	10	4	40	577	617

e) Catch composition in CFA 23, sub-area D (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
27	283	< 95 mm	133	668	40	27	173	695	868
		> 95 mm	1,461	8,424	251	447	1,712	8,871	10,583
		total	1,594	9,092	291	474	1,885	9,566	11,451

Appendix 3

Table 3. Seasonal catch composition, in number, from at-sea samples for Crab Fishing Area 24 in 2001.

a) Catch composition in CFA 24, all sub-areas (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
60	532	< 95 mm	731	1,848	160	37	891	1,885	2,776
		> 95 mm	3,765	12,986	430	1,198	4,195	14,184	18,379
		total	4,496	14,834	590	1,235	5,086	16,069	21,155

b) Catch composition in CFA 24, sub-area A (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
22	165	< 95 mm	180	641	17	3	197	644	841
		> 95 mm	1,034	3,816	132	605	1,166	4,421	5,587
		total	1,214	4,457	149	608	1,363	5,065	6,428

c) Catch composition in CFA 24, sub-area B (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
8	52	< 95 mm	61	98	9	1	70	99	169
		> 95 mm	408	1,866	20	84	428	1,950	2,378
		total	469	1,964	29	85	498	2,049	2,547

d) Catch composition in CFA 24, sub-area C (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
2	9	< 95 mm	2	32	2	1	4	33	37
		> 95 mm	14	264	6	39	20	303	323
		total	16	296	8	40	24	336	360

e) Catch composition in CFA 24, sub-area D (%).

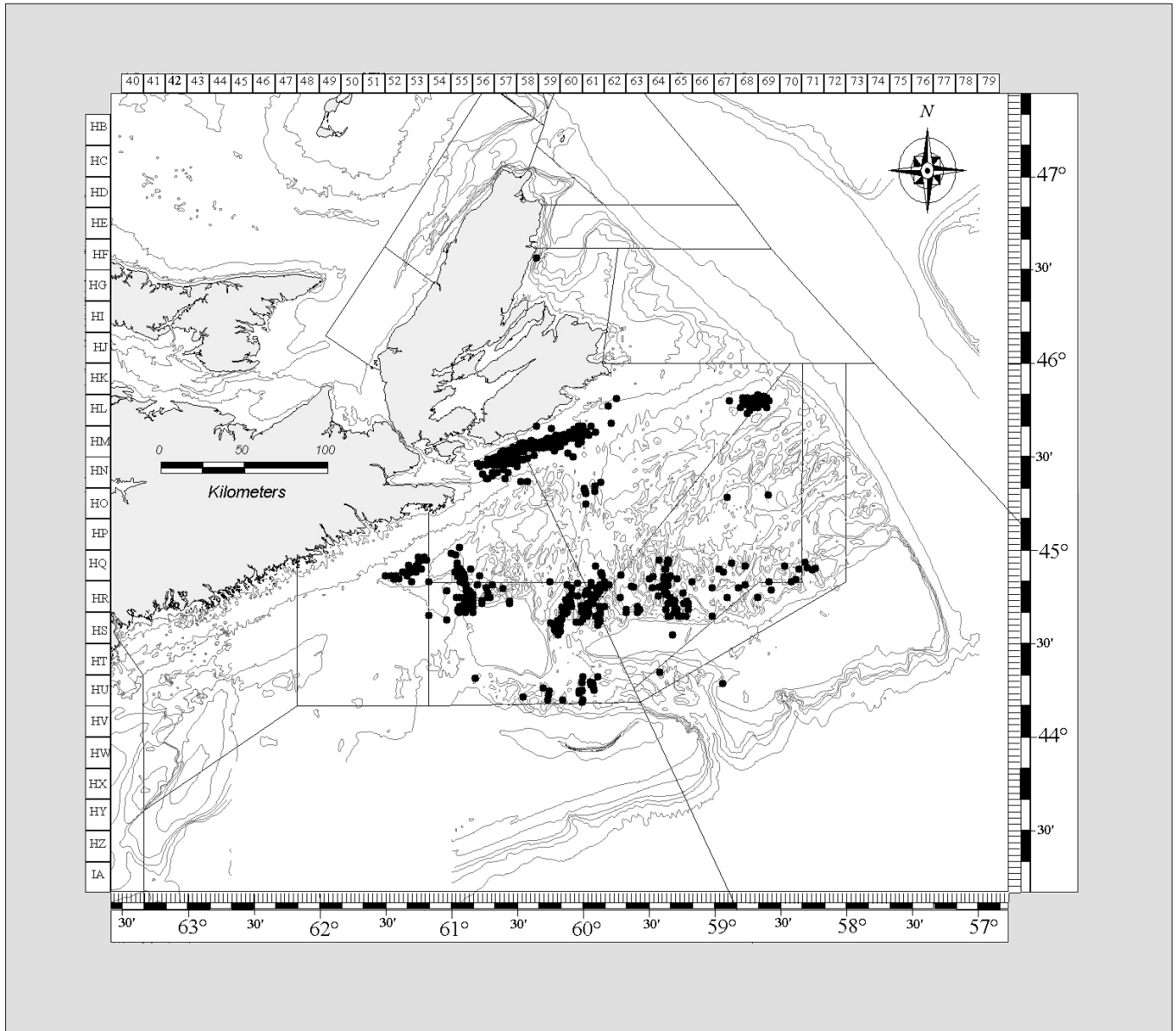
Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
16	204	< 95 mm	364	405	116	18	480	423	903
		> 95 mm	2,105	4,806	252	305	2,357	5,111	7,468
		total	2,469	5,211	368	323	2,837	5,534	8,371

f) Catch composition in CFA 24, sub-area E (%).

Coverage		Size	Hard shell crab		Soft shell crab		By maturity stage		Total
trip	trap		adolescent	adult	adolescent	adult	adolescent	adult	
12	90	< 95 mm	124	672	16	14	140	686	826
		> 95 mm	204	2,234	20	165	224	2,399	2,623
		total	328	2,906	36	179	364	3,085	3,449

Appendix 4

Shrimp fishery positions in eastern Nova Scotia in 2001.



Appendix 5

Table 1. Retrospective Traffic Light Analysis (1998-2000) and current assessment (2001).

Northern ENS	1998	1999	2000	2001
<i>Fishery Data</i>				
CPUE (kg)				
Effort (# trap haul)				
Size (carapace width)				
<i>Survey Data</i>				
Biomass/abundance index				
Recruitment (juveniles)				
Recruitment (R-1)				
<i>Other Data</i>				
Temperature				
Industry perspective				
<i>Score</i>				

Southern ENS	1998	1999	2000	2001
<i>Fishery Data</i>				
CPUE (kg)				
Effort (# trap haul)				
Size (carapace width)				
<i>Survey Data</i>				
Biomass/abundance index				
Recruitment (juveniles)				
Recruitment (R-1)				
<i>Other Data</i>				
Temperature				
Industry perspective				
<i>Score</i>				

Appendix 5

Table 2a. Annual landings, catch rate and effort statistics for Snow Crab in northeastern Nova Scotia, 2001 (CFAs 20, 21 and 22), 1997-2001.

Year	Active licenses/permits	TAC (t)	Landing Statistics (t)	Total mean CPUE (kg/trap haul)	Total Effort (1000's of trap hauls)
1997	74	540	534	23.3	22.9
1998	74	660	657	41.6	15.8
1999	78	900	899	54.8	16.4
2000	79	1,015	1,017	68.3	14.9
2001	80	1,065	1,066	94.1	11.3
Average (97-01)		836.0	834.6	56.4	16.3

Table 2b. Annual landings, catch rate and effort statistics for Snow Crab in southeastern Nova Scotia, 2001 (CFAs 23 and 24), 1997-2001.

Year	Active licenses/permits	TAC (t)	Landing Statistics (t)	Total mean CPUE (kg/trap haul)	Total Effort (1000's of trap hauls)
1997	59	1,163	1,157	50.9	22.7
1998	67	1,671	1,558	68.9	22.6
1999	-	2,700	2,700	71.1	38.0
2000	158	8,799	8,701	85.0	102.4
2001	167	8,823	9,112	88.5	102.9
Average (97-01)		4,631	4,646	72.9	57.7